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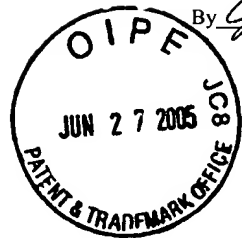
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PATENT

Attorney Docket No. SIC-00-004

By

Sam G. Weland



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

KAZUHIRO FUJII

Application No.: 09/766,696

Filed: January 19, 2001

For: BRACKET ASSEMBLY FOR A
MOTOR CONTROLLED BICYCLE
TRANSMISSION

Examiner: Anne Marie M. Boehler

Art Unit: 3611

CORRECTED APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

This corrected appeal brief is being submitted in response to the Notification of Non-Compliant Appeal Brief dated May 27, 2003.

I. Real Party In Interest

The assignee and real party in interest is Shimano, Inc., a Japanese corporation having a principal place of business in Osaka, Japan.

II. Related Appeals And Interferences

There are no prior or pending appeals, interferences or judicial proceedings known to the appellant, to appellant's legal representative, or to the assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. Status Of Claims

Claims 1-82 are pending. Of those claims, claims 19-65 and 74-76 have been withdrawn from consideration, and claims 68 and 70-73 have been allowed. Claims 1-18, 66, 67, 69 and 77-82 have been finally rejected and are under appeal.

IV. Status Of Amendments

No amendment to the claims was filed subsequent to final rejection.

V. Summary Of Claimed Subject Matter

As indicated in the specification at page 4, lines 5-17 and shown in Figs. 1-3, the present invention is directed to a bracket apparatus (10) for mounting a control device (e.g., motor (14), Fig. 1) to a bicycle frame (18), wherein the frame (18) has a bottom bracket shell (42), a seat tube (34) extending upwardly relative to the bottom bracket shell (42), a first chain stay (48A) extending rearwardly relative to seat tube (34), a second chain stay (48B, Fig. 3) extending rearwardly relative to seat tube (34) and a first seat stay (52A) extending rearwardly relative to seat tube (34) above first chain stay (48A).

As stated at page 5, lines 4-10 and shown in Figs. 2, 3 and 5A-5C, main bracket (70) includes a substantially horizontal bracket base (82) for supporting control device/motor (14) at least partially above chain stay (48A) and at least partially below first seat stay (52A), an elongated first bracket support (86) for coupling bracket base (82) to chain stay (48A), and an elongated second bracket support (90) for coupling bracket base (82) to chain stay (48A) through a bracket support bridge (78). As shown in Fig. 3, bracket support bridge (78, Figs. 2-3) is adapted to bridge first chain stay (48A) and second chain stay (48B) for coupling second bracket support (90) to first chain stay (48A) and to second chain stay (48B). As shown in Fig. 5B, an upper surface (94) of bracket base (82) is substantially horizontal and flat along substantially its entire length. As a result, upper surface (94) is structured to receive a vertically downwardly directed force component from a portion of the control device/motor (14) mounted above it.

As stated at page 5, lines 10-19 and shown in Figs. 5A-5C, a mounting surface in the form of a mounting flange (98) extends upwardly from upper surface (94) for mounting control device/motor (14) to the front of bracket base (82). Mounting flange (98) includes a substantially planar first flange portion (102) extending generally perpendicularly upwardly from upper surface (94) at the front of bracket base (82), and a substantially planar second flange portion (106) extending generally perpendicularly rearwardly from an inner lateral side of first flange portion (102). First flange portion (102) and second flange portion (106) include mounting openings (110) and (114), respectively, for receiving mounting screws (118) and (122) (Fig. 4) for securing control device/motor (14) to mounting flange (98). Similar mounting structures in the form of mounting holes (126) and (128) are disposed on upper surface (94) for receiving further mounting screws (not shown) for securing control device/motor (14) to upper surface (94). As a result of these mounting holes, control device (14) can be removed as a unit from bracket base (82). The upper surface (94) does not form a part of control device/motor (14).

As stated at page 5, line 23 through page 6, line 3 and shown in Figs. 5B and 5C, first bracket support (86) and second bracket support (90) are elongated members that extend substantially parallel to each other downwardly from a lateral side (130) of bracket base (82) when viewed from a front of bracket base (82) (as in Fig. 5C) and are substantially perpendicular to upper surface (94). Thus, upper surface (94) extends laterally in a horizontal direction beyond the first bracket support (86) and the second bracket support (90) as best seen in Fig. 5C. Second bracket support (90) is disposed at a front of bracket base (82), and first bracket support (86) is disposed behind second bracket support (90). First bracket support (86) includes a vertically elongated mounting opening (134) for receiving a mounting screw (138) (Fig. 2) therethrough for coupling first bracket support (86) to clamping band (74). Second bracket support (90) includes a mounting opening (142) having a threaded inner peripheral surface (144) for receiving a mounting screw (146) (Fig. 2) therethrough for coupling second bracket support (90) to bracket support bridge (78).

VI. Grounds Of Rejection To Be Reviewed On Appeal

Claims 1-18, 66, 67, 69 and 77-82 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ethington (US 5,681,234) in view of Chappell (US 4,599,079).

VII. Arguments

Ethington and Chappell neither disclose nor suggest the subject matter recited in the claims.

Claim 1, 17, 66, 78-80 and 82

Logistically, it may be best to begin with claims 80 and 82. The preamble of claim 80 sets forth the structure of the bicycle as the environment in which the apparatus is to be used. The positively recited elements in claim 80 comprise a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base, wherein the bracket base has an upper surface that is structured to receive a vertically downwardly directed force component from a portion of the control device mounted above it. A first bracket support is provided for coupling the bracket base to at least one of the first chain stay and the first seat stay, and a second bracket support is provided for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell. Claim 82 is the same except the bracket base is dimensioned for supporting a motor. Of course, there is nothing wrong with defining the dimensions of a device in terms of the environment in which it is to be used. *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1575-76, 1 USPQ2d 1081, 1087-88 (Fed. Cir. 1986)

Ethington discloses an automatic bicycle transmission wherein a power unit (50) is attached to a down tube (47) through clamp bands (65). The power unit (50) comprises a housing that houses actuators (48) and (54). The actuators (48, 54) comprise servo motors (112, 112') disposed in separate enclosed compartments formed by the housing. Servo motors (112, 112') have lead screws (116, 116') that extend through the intermediate interior housing wall and threadingly engage slides (122, 122') which, in turn, slide within guides (124, 124') fixedly mounted to the housing. Slides (122, 122') are connected to cables (66, 68) that exit through the exterior housing wall.

Chappell discloses an automatic derailleur shifter (12) attached to a chain stay (38).

The office action indicates that it would be obvious to mount the Ethington power unit (50) to the chain stay in order to mount the power unit proximate the sensing device for a more compact

arrangement. However, there is no motivation to mount Ethington's power unit (50) on the chain stay because there is little benefit to placing the power unit (50) closer to the sensors. In fact, the proposed system would be less compact. It would require a greater length of the cable (78) that connects the power unit (50) to the controller (72) mounted on the top tube (74). Such an arrangement also would require running the connector cables (66) and (68) from the chain stays to the shift levers (46) and (52), thus creating a wiring nightmare. Functionally, the greater length of the connector cables (66) and (68) would create more play in the cables. Such a placement also would require the connector cables (66) and (68) to exit the power unit case at a more acute angle, thus increasing friction and wear on the cables, and the connector cables (66) and (68) would have to cross over to one side of the bicycle and be retained away from the wheel. The resulting connector cables (66) and (68) would be more exposed such that the rider may inadvertently shift the front or rear derailleur by inadvertently contacting the connector cables (66) and (68) with his or her legs or feet.

Furthermore, the Ethington bracket base is not dimensioned for supporting the control device such that the control device can be removed as a unit from the bracket base. The Ethington housing (50) unitarily houses the actuators (48, 54). There is no way actuators (48, 54) can be removed from housing (50) as a unit. The same argument applies to claim 1, 66, 78 and 79.

Claim 17 also recites a bracket support bridge adapted to bridge the first chain stay and the second chain stay for coupling the second bracket support to the first chain stay and to the second chain stay. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Claim 66 also recites the upper surface of the bracket base not forming a part of the control device. The upper surface of Ethington's power unit (50) is part and parcel of the control device, since power unit (50) *is* the control device.

Claim 78 also recites the bracket base having an upper surface that extends laterally in a horizontal direction beyond the first bracket support and the second bracket support. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Claims 3 and 4

Claims 3 and 4 recite one or more of the bracket supports being laterally offset. There is no disclosure or suggestion of such features in the prior art, and the office action does not address them.

Claims 5 and 6

Claims 5 and 6 recite one or more of the bracket supports extending downwardly from a lateral side of the bracket base when viewed from a front of the bracket base. There is no disclosure or suggestion of such features in the prior art, and the office action does not address them.

Claim 7

Claim 7 recites the bracket base including a mounting structure disposed on an upper surface thereof for mounting the control device above the bracket base. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Claim 8

Claim 8 recites the bracket base including a mounting hole on the upper surface thereof for forming the mounting structure. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Claim 9

Claim 9 recites the bracket base including a mounting flange extending upwardly from an upper surface thereof for mounting the control device to the bracket base. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

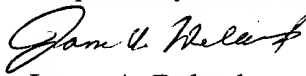
Claim 10

Claim 10 recites the mounting flange being disposed at a front of the bracket base. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Claim 14

Claim 14 recites a threaded mounting opening formed in the second bracket support. There is no disclosure or suggestion of such a feature in the prior art, and the office action does not address it.

Respectfully submitted,



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VIII. CLAIMS APPENDIX

CLAIM 1. A bracket apparatus for mounting a separate self-contained control device for a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base;

wherein the bracket base has a substantially horizontal upper surface for substantially its entire length, wherein the upper surface is structured to receive a vertically downwardly directed force component from a portion of the control device mounted above it;

a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay; and

a second bracket support for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell.

CLAIM 2. The apparatus according to claim 1 wherein the first bracket support is adapted to couple the bracket base to the first chain stay, and wherein the second bracket support is adapted to couple the bracket base to the first chain stay.

CLAIM 3. The apparatus according to claim 2 wherein at least one of the first bracket support and the second bracket support is laterally offset from a center of the bracket base when viewed from a front of the bracket base.

CLAIM 4. The apparatus according to claim 3 wherein the first bracket support and the second bracket support are laterally offset from a center of the bracket base when viewed from a front of the bracket base.

CLAIM 5. The apparatus according to claim 2 wherein at least one of the first bracket support and the second bracket support extends downwardly from a lateral side of the bracket base when viewed from a front of the bracket base.

CLAIM 6. The apparatus according to claim 5 wherein the first bracket support and the second bracket support extend downwardly from a lateral side of the bracket base when viewed from a front of the bracket base.

CLAIM 7. The apparatus according to claim 2 wherein the bracket base includes a mounting structure disposed on an upper surface thereof for mounting the control device above the bracket base.

CLAIM 8. The apparatus according to claim 7 wherein the bracket base includes a mounting hole on the upper surface thereof for forming the mounting structure.

CLAIM 9. The apparatus according to claim 2 wherein the bracket base includes a mounting flange extending upwardly from an upper surface thereof for mounting the control device to the bracket base.

CLAIM 10. The apparatus according to claim 9 wherein the mounting flange is disposed at a front of the bracket base.

CLAIM 11. The apparatus according to claim 2 wherein at least one of the first bracket support and the second bracket support is disposed at a front of the bracket base.

CLAIM 12. The apparatus according to claim 11 wherein the first bracket support is disposed behind the second bracket support, and wherein the second bracket support is disposed at a front of the bracket base.

CLAIM 13. The apparatus according to claim 2 wherein the first bracket support includes a first mounting opening, and wherein the second bracket support includes a second mounting opening.

CLAIM 14. The apparatus according to claim 13 wherein the second mounting opening has a threaded inner peripheral surface.

CLAIM 15. The apparatus according to claim 2 wherein an upper surface of the bracket base is substantially flat along substantially its entire length.

CLAIM 16. The apparatus according to claim 2 wherein at least a portion of the first bracket support extends substantially parallel to the second bracket support.

CLAIM 17. A bracket apparatus for mounting a control device for a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first

seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

- a bracket base for supporting the control device at least partially above the first chain stay;
- a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay;
- a second bracket support for coupling the bracket base to the first chain stay; and

wherein the bicycle frame has a second chain stay extending rearwardly relative to the seat tube, and further comprising a bracket support bridge adapted to bridge the first chain stay and the second chain stay for coupling the second bracket support to the first chain stay and to the second chain stay.

CLAIM 18. The apparatus according to claim 17 further comprising a clamping band for coupling the first bracket support to the first chain stay.

CLAIM 66. A bracket apparatus for mounting a separate self-contained control device for a bicycle to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

- a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base;

- wherein the bracket base has a substantially horizontal upper surface for substantially its entire length, wherein the upper surface is structured to receive a vertically downwardly directed

force component from a portion of the control device mounted above it, and wherein the upper surface does not form a part of the control device; and

a bracket support extending from the bracket base for coupling the bracket base to at least one of the first chain stay, the first seat stay, the seat tube, and the bottom bracket shell.

CLAIM 67. The apparatus according to claim 66 wherein the bracket base has a substantially horizontal mounting surface for mounting the control device to the bracket base.

CLAIM 69. The apparatus according to claim 66 wherein the bracket base has a substantially vertical mounting surface for mounting the control device to the bracket base.

CLAIM 77. The apparatus according to claim 66 wherein the bracket support extends downwardly from the bracket base.

CLAIM 78. A bracket apparatus for mounting a separate self-contained control device for a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base;

a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay;

a second bracket support for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell; and

wherein the bracket base has an upper surface that extends laterally in a horizontal direction beyond the first bracket support and the second bracket support.

CLAIM 79. A bracket apparatus for mounting a separate self-contained control device for a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base;

wherein the bracket base includes a mounting surface extending vertically upwardly from an upper surface thereof, wherein the upper surface is structured to receive a vertically downwardly directed force component from a portion of the control device mounted above it;

a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay; and

a second bracket support for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell.

CLAIM 80. A bracket apparatus for mounting a separate self-contained control device for a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly

relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

a bracket base dimensioned for supporting the control device at least partially above the first chain stay and at least partially below the first seat stay such that the control device can be removed as a unit from the bracket base;

wherein the bracket base has an upper surface that is structured to receive a vertically downwardly directed force component from a portion of the control device mounted above it;

a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay; and

a second bracket support for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell.

CLAIM 81. The apparatus according to claim 80 wherein the upper surface is substantially horizontal from the first bracket support to the second bracket support.

CLAIM 82. A bracket apparatus for mounting a separate self-contained motor that controls a bicycle transmission to a bicycle frame, wherein the frame has a bottom bracket shell, a seat tube extending upwardly relative to the bottom bracket shell, a first chain stay extending rearwardly relative to the seat tube and a first seat stay extending rearwardly relative to the seat tube above the first chain stay, wherein the apparatus comprises:

a bracket base dimensioned for supporting the motor at least partially above the first chain stay and at least partially below the first seat stay such that the motor can be removed as a unit from the bracket base;

wherein the bracket base has an upper surface that supports the motor so as to receive a

vertically downwardly directed force component from a portion of the motor mounted above it;

a first bracket support for coupling the bracket base to at least one of the first chain stay and the first seat stay; and

a second bracket support for coupling the bracket base to at least one of the first chain stay, the seat tube, and the bottom bracket shell.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None